REMARKS

Claims 1-27 are pending, with claims 1, 12, and 20 being independent. Claims 3, 5, 6, 12-19, and 24 have been cancelled by this amendment without prejudice. Claims 1, 2, 4, 7, 8, 10, 11, 20, 22, 23, and 25-27 have been amended. New claims 28-35 have been added, with claim 28 being independent. No new matter has been added. Reconsideration and allowance of the above-referenced application are respectfully requested.

Drawings:

The drawings stand objected to for various informalities. The drawings and the specification have now been amended to correct these, as well as other informalities. No new matter is added by this Amendment. In view of these amendments, withdrawal of the drawing objections is respectfully requested.

Claim Objections:

Claims 3, 4, 6, 8, 18, and 26 stand objected to for various informalities. The claim objections have been obviated by the cancellation of claims 3, 6, and 18, and by the amendment of claim 26 to depend from claim 21. Thus, withdrawal of these claim objections is respectfully requested.

Claim Rejections Under 112:

Claims 3, 10-11, 19, and 27 stand rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. These rejections have been obviated by the cancellation of claims 3 and 19, and by the amendments made to claims 10 and 27. In view of these amendments, withdrawal of these rejections is respectfully requested.

Claim Rejections Under 102:

Claims 1-27 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Gochman (U.S. Patent No. 5,964,868). This contention is respectfully traversed.

The present application is directed to a return address buffer, including a speculative return address buffer that can readily recover from a branch mis-prediction. In contrast, Gochman is directed to a return stack buffer composed of a Speculative Return Stack Buffer (updated using speculatively fetched instructions) and an Actual Return Stack Buffer (updated using information from fully executed branch instructions), where, "the Speculative Return Stack Buffer may become corrupted when incorrect instructions are fetched[; and w]hen a branch misprediction causes a pipeline flush, the contents of the Actual Return Stack Buffer is copied into the Speculative Return

Stack Buffer to correct any corrupted information." (See Gochman at Abstract; emphasis added.)

Independent claims 1 and 20 have been amended to recite, "wherein the speculative return address buffer comprises a circular buffer including a back pointer field to store pointers into the two part return address buffer." This feature of the claimed subject matter allows the speculative return address buffer to be corrected after a branch mis-prediction without the need to copy the committed return address buffer into the speculative return address buffer. This can have significant advantages in a processor architecture that supports executing branches out-of-order.

Dependent claims 2, 4, 7-11, 21-23, and 25-28 are patentable for at least the above reasons and based on their own merits. For example, with respect to claim 7, nothing in Gochman describes, either expressly or inherently, "a storage device holding an SCOLOR indicator bit that is inverted each time the read pointer wraps over or under a depth N of the speculative buffer; and a bit storage location associated with each entry in the speculative buffer to hold a current value of SCOLOR each time a return address is written into the speculative buffer."

Dependent claims 2, 4, 7, 8, 10, 11, 22, 23, and 25-27 have been amended to correct various informalities.

Newly added claims 28-35 are patentable for at least the above reasons.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific issue or comment does not signify agreement with or concession of that issue or comment. Because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

It is respectfully suggested for all of these reasons, that the current rejection is totally overcome; that none of the cited art teaches or suggests the features which are now claimed, and therefore that all of these claims should be in condition for allowance. A formal notice of allowance is thus respectfully requested.

No fees are believed due with this response. Please apply any necessary charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: Nov. 8, 2004

William E. Hunter
Reg. No. 47,671
Attorney for Intel Corporation

Fish & Richardson P.C.
PTO Customer Number: **20985**
12390 El Camino Real
San Diego, CA 92130
Telephone: (858) 678-5070
Facsimile: (858) 678-5099
10444401.doc

Amendments to the Drawings:

The attached replacement sheets of drawings include changes to Figs. 2B, 2C, 2D-1, 2D-2, 2D-3, 3A, 3B-1, 3B-2, 3C-1, 3C-2, 3C-3, and 3C-4 and replaces the original sheet including Figs. 2B, 2C, 2D-1, 2D-2, 2D-3, 3A, 3B-1, 3B-2, 3C-1, 3C-2, 3C-3, and 3C-4.

In Figure 2B, the reference 80a identifying the sequence of actions, 82-92, has been removed.

In Figure 2C, the reference 80a has been changed to 80b, and the reference 80b identifying the sequence of actions, 100-120, has been removed.

In Figure 2D-1, the reference 120 has been changed to 121, and the reference 80c identifying the action, 120 (now 121), has been removed.

In Figure 2D-2, the reference 80d identifying the action, 122, has been removed.

In Figure 2D-1, the reference 80f has been changed to 80e, and the reference 80e identifying the sequence of actions, 126-128, has been removed.

In Figure 3A, an extra line connecting the CTOS pointer 49 and the CRSB 44 has been removed.

In Figure 3B-1, the reference 140a identifying the sequence of actions, 141-146, has been removed.

In Figure 3B-2, the reference 140b identifying the sequence of actions, 148-158, has been removed.

In Figure 3C-1, the reference 140c identifying the action, 160, has been removed.

In Figure 3C-2, the reference 140d identifying the action, 162, has been removed.

In Figure 3C-3, the reference 140e identifying the action, 170, has been removed.

In Figure 3C-4, the reference 140f identifying the sequence of actions, 172-174, has been removed.

Attachments following last page of this Amendment:

Replacement Sheets (8 pages)

Annotated Sheets Showing Changes (6 pages)

OIPE JC156 NOV 12 2004 PATENT & TRADEMARK OFFICE

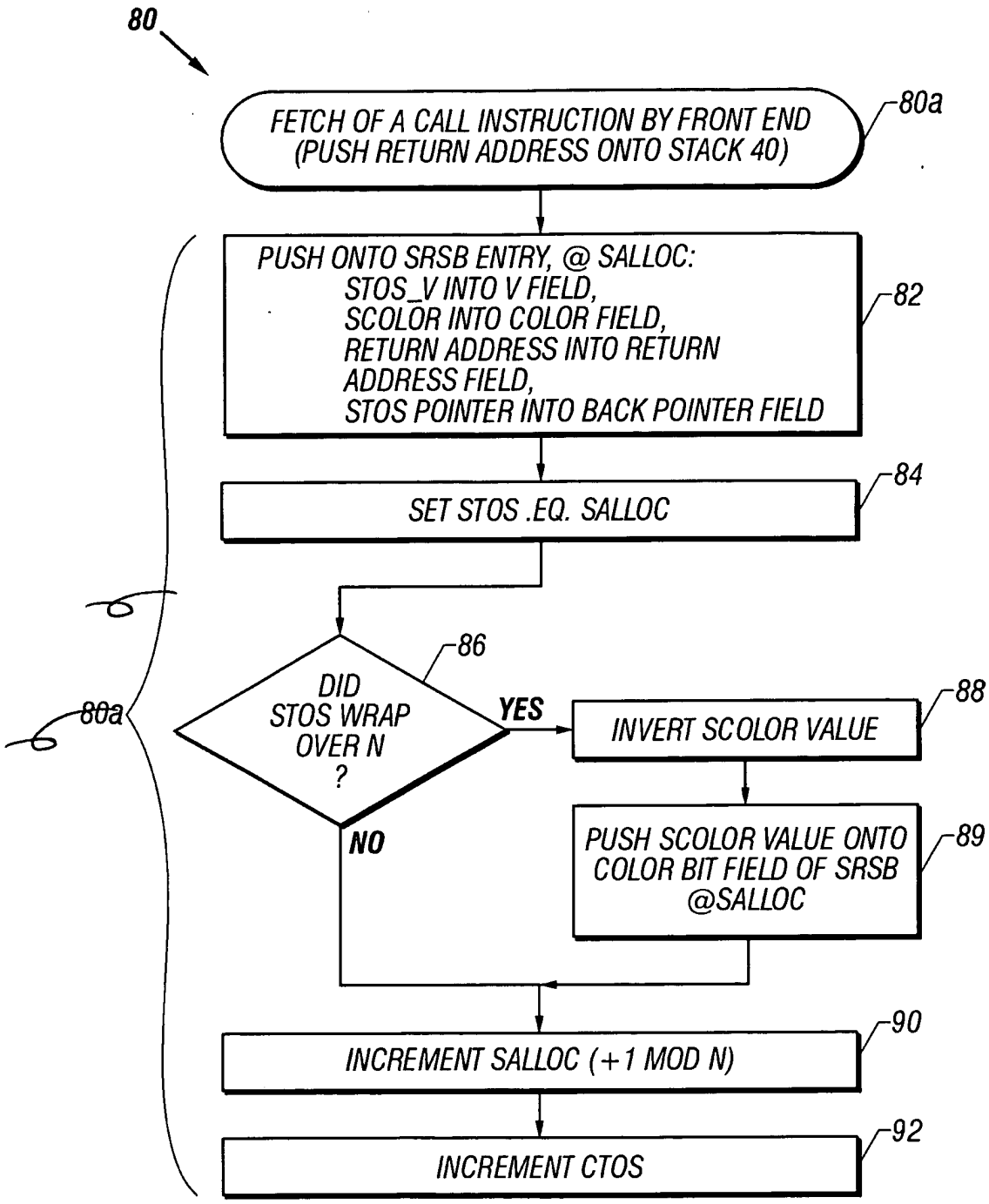

FIG. 2B

OIPE JC156
NOV 1 2 2004
PATENT & TRADEMARK OFFICE

4/8

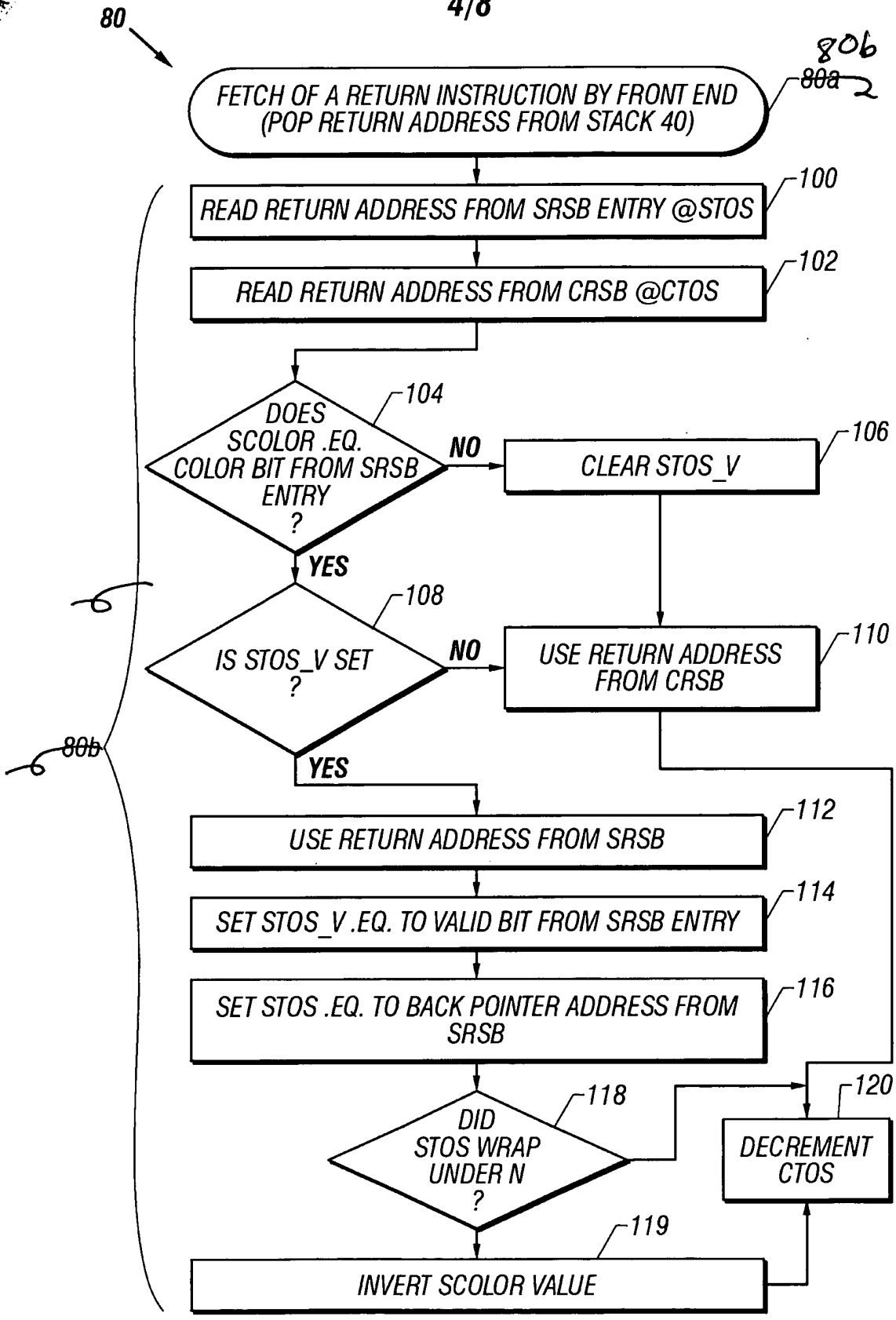

FIG. 2C

OIPE JC156
NOV 12 2004
PATENT & TRADEMARK OFFICE

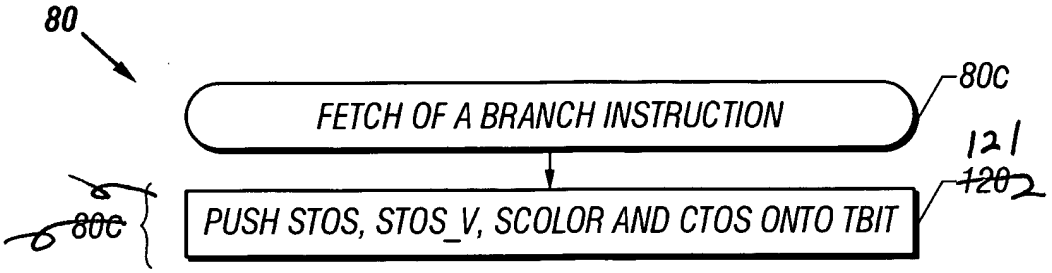

FIG. 2D-1

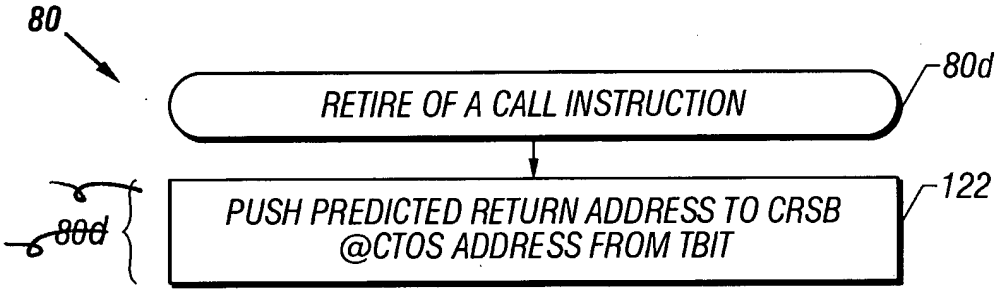

FIG. 2D-2

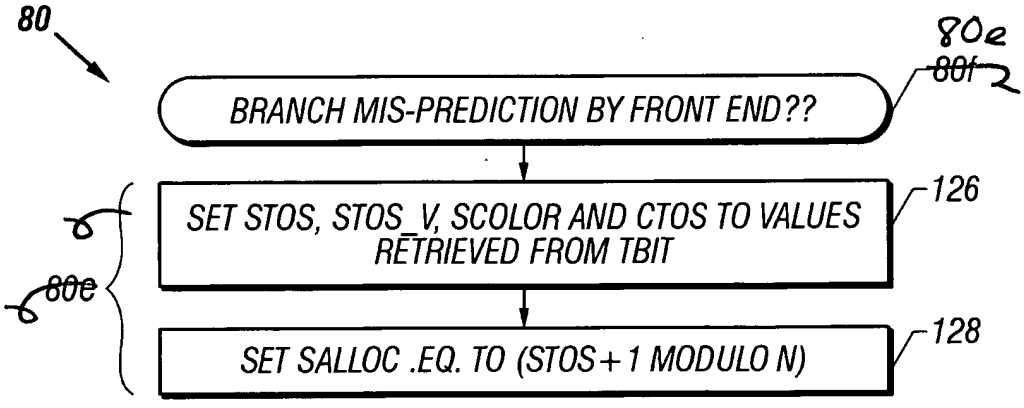

FIG. 2D-3

NOV 1 2 2004
PATENT & TRADEMARK OFFICE

6/8

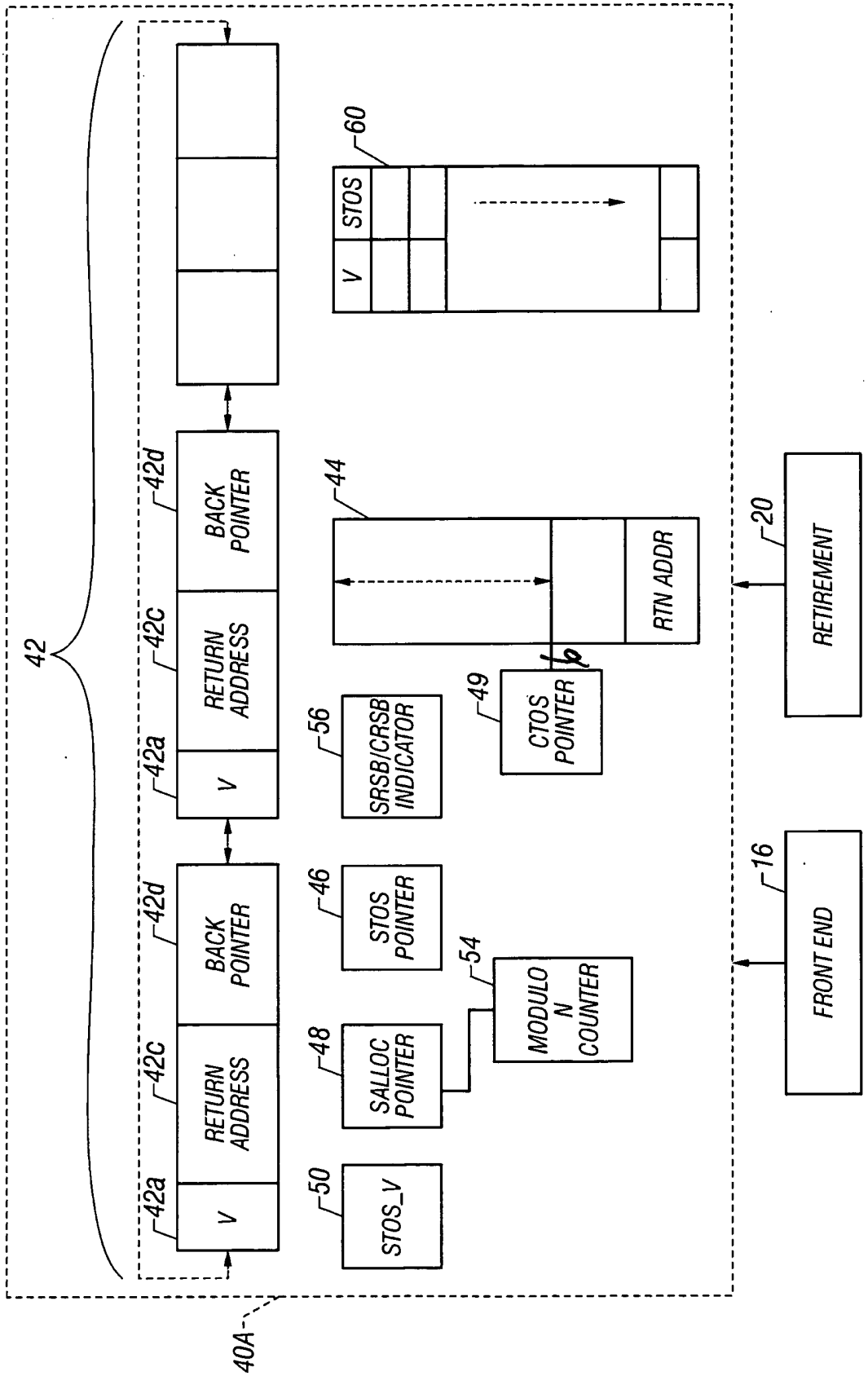

FIG. 3A

OIPE JC156 NOV 12 2004 PATENT & TRADEMARK OFFICE

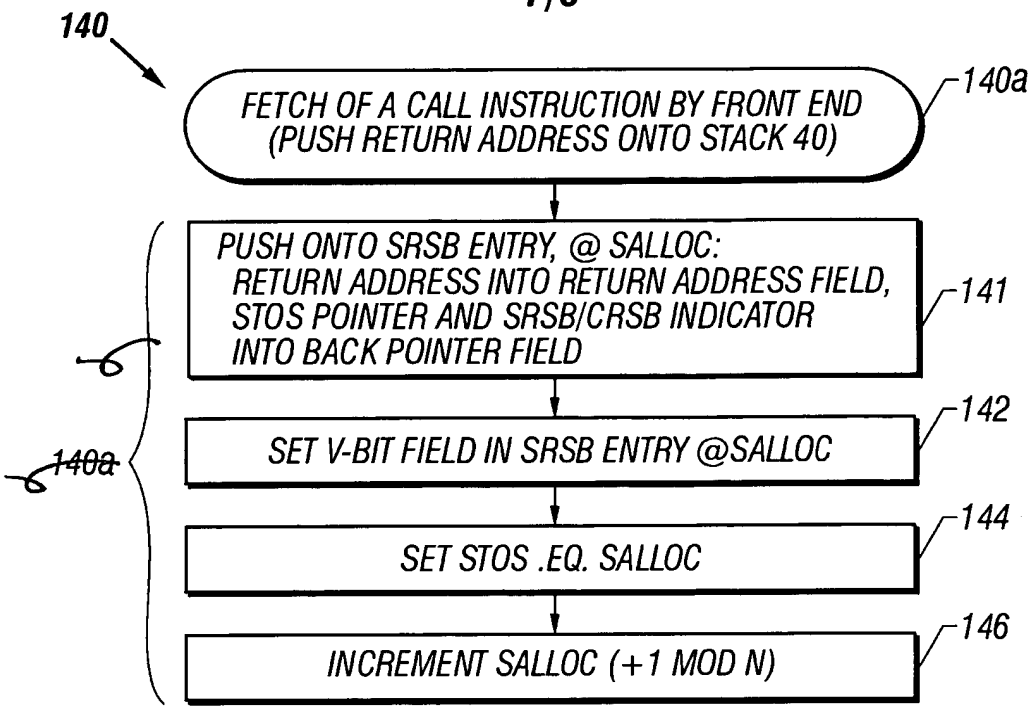

FIG. 3B-1

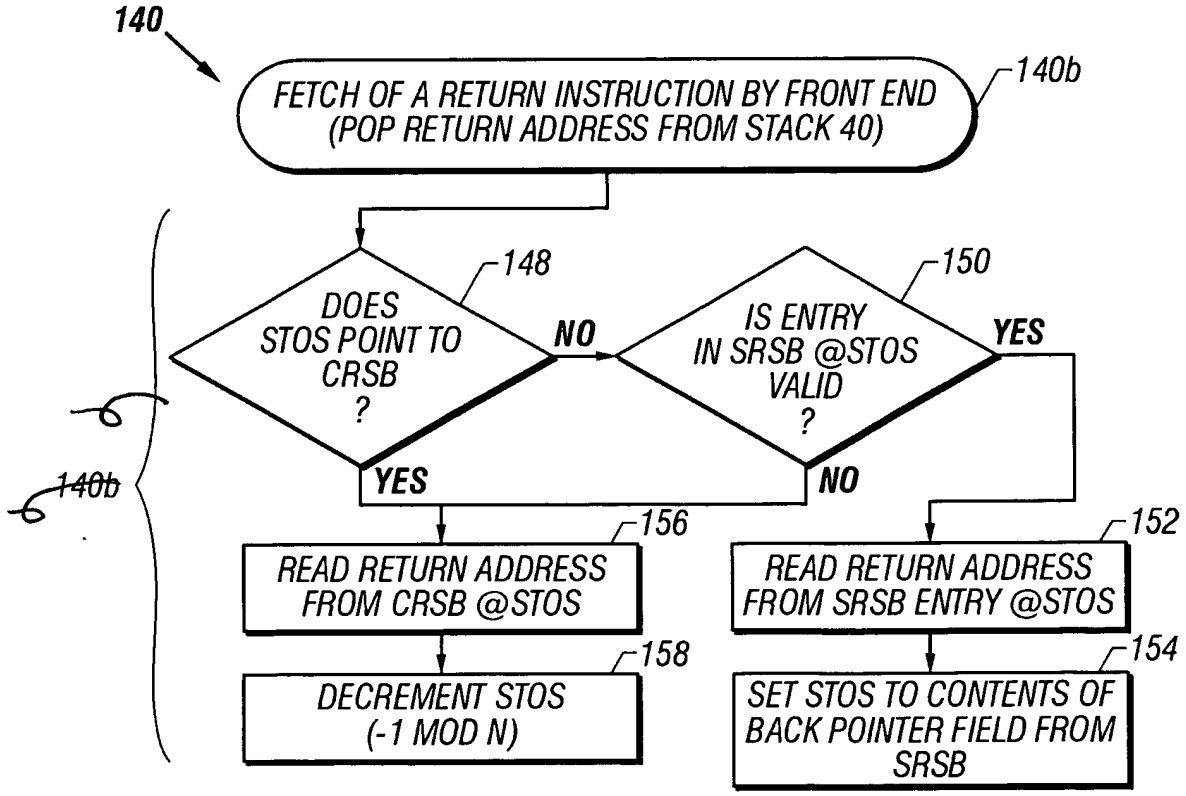

FIG. 3B-2

OIPE JC156
NOV 12 2004
PATENT & TRADEMARK OFFICE

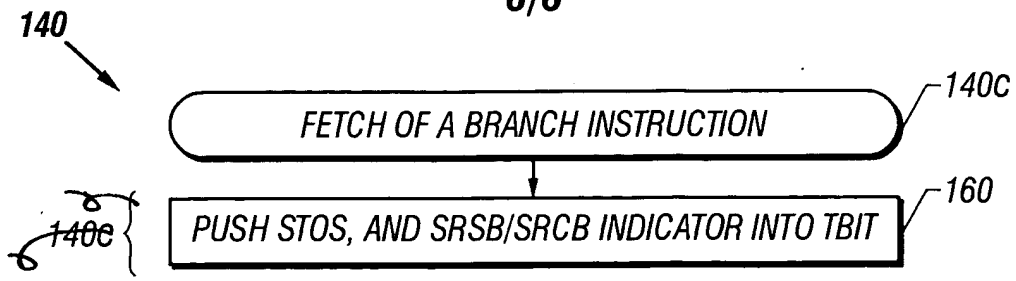

FIG. 3C-1

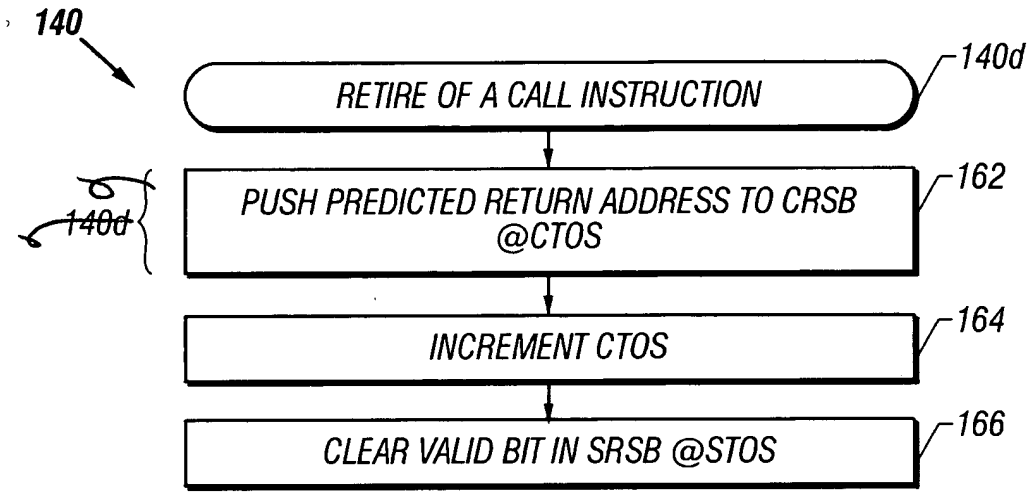

FIG. 3C-2

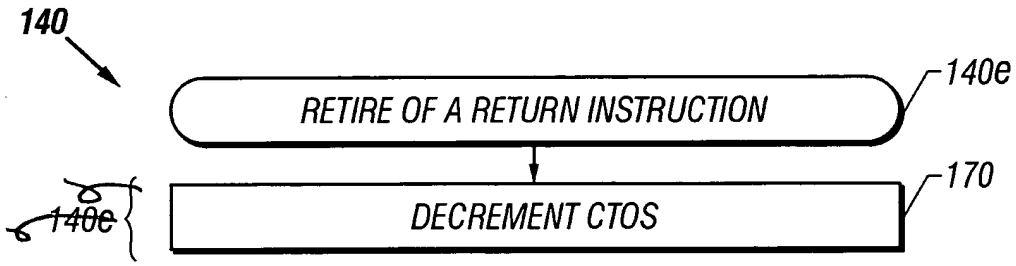

FIG. 3C-3

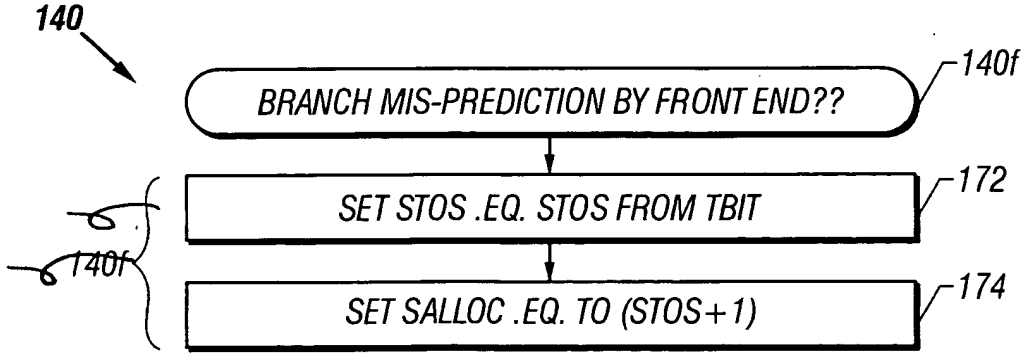

FIG. 3C-4